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10/538,942	06/13/2005	Mariko Takahashi	1163-0529PUS1	5937

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EXAMINER	
ABDI, AMARA	

ART UNIT	PAPER NUMBER
2624	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	10/538,942	TAKAHASHI ET AL.	
	Examiner	Art Unit	
	Amara Abdi	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 February 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06/13/2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's response to the last office action, filed February 27th, 2008 has been entered and made of record.

2. Applicant's arguments with respect to claims 1-9 have been considered but are moot in view of the new ground(s) of rejection.

Remarks

3. Applicant's argument with respect to claims 1-13 have been fully considered, but they are not persuasive.

a. Applicant argues that Komatsu only teaches doing the "acquiring of a chromaticity range indicating said color reproduction characteristics corresponding to hue of [image data]" only one and to only one type of image data. Independent claim 1 requires that this hue-dependent chromaticity range acquisition be performed twice, each time on a different set of data.

However, in response to applicant's argument, Examiner would like to point out that claim language is given its broadest reasonable interpretation. Komatsu et al. disclose the acquiring of a chromaticity range indicating the color reproduction characteristics corresponding to a hue of image data (paragraph [0006], line 17-18). The method of acquiring a chromaticity range indicating the color reproduction is the same, whether it is applied ones or twice, and whether it's applied to the same set of data or different set of data. Therefore, the "acquiring of a chromaticity range indicating the color reproduction characteristics corresponding to the hue of the image data

converted by the color corrector based on the data describing the color reproduction characteristics" is inherent.

Therefore, the rejection of claims 1-13 is good and should be sustained.

b. Applicant argues that although the lightness is determined from the hue, it is determined from the hue at full saturation, meaning that it does not contain data about the amount of saturation adjustment required. However, in response to applicant's arguments, the Examiner disagrees, because although the lightness is determined for the hue at full saturation, it doesn't mean that it does not contain the amount of saturation adjustment. The color conversion section provides a lightness L, Hue H, and information on saturation C. the information on saturation C, may contain a full saturation and the amount of saturation adjustment required.

Therefore, claim 12 is still not in a good condition for allowance.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 1-4, and 11-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Komatsu et al. (JP 2000-022978).

(1)Regarding claim 1:

Komatsu et al. disclose a color correction apparatus (see the Abstract, line 1-2) comprising:

a color corrector (Fig. 2) that makes a color correction to an input image signal (see the Abstract, line 6-8, and paragraph [0003], line 17-18); and

a color gamut compressor (208 in Fig. 2) that performs color gamut compression on the color-corrected input image signal (see the Abstract, line 8-16, and paragraph [006], line 9-21) based on data describing color reproduction characteristics (see the Abstract, line 10-14) so that the color-corrected image data outputted from said color corrector has a chromaticity range which is contained in a color reproduction region (see the Abstract, line 16-19, and paragraph [0006], line 14-17) which is based on said color reproduction characteristics (see the Abstract, line 18-19), wherein:

said color gamut compressor determines a hue of the image data converted by said color corrector (paragraph [0006], line 17-18), acquires both a chromaticity range indicating said color reproduction characteristics corresponding to a hue of the input image signal (paragraph [0006], line 17-23), and a chromaticity range indicating said color reproduction characteristics corresponding to the hue of the image data converted by said color corrector based on the data describing the color reproduction characteristics (paragraph [0006], line 17-23). (The "acquiring of a chromaticity range indicating the color reproduction characteristics corresponding to the hue of the image data converted by the color corrector based on the data describing the color reproduction characteristics" is inherent, because the method of acquiring a chromaticity

range indicating the color reproduction is the same, whether it is applied ones or twice, and whether it's applied to the same set of data or different set of data).

(2)Regarding claim 2:

Komatsu et al. further disclose a color correction apparatus (see the Abstract, line 1-2), wherein said color corrector is provided with a color reproduction corrector converts (see the Abstract, line 10-14) that converts a chromaticity range of the input image signal (paragraph [0006], line 14-17) based on the data describing the color reproduction characteristics (paragraph [0006], line 21-23).

(3)Regarding claim 3:

Komatsu et al. further disclose a color correction apparatus (see the Abstract, line 1-2), wherein said color corrector is provided with a hue converter that converts a hue of the input image signal (paragraph [0006], line 16-18, and paragraph [0011], line 18-21) based on data describing the hue to be converted and an amount of adjustment (paragraph [0006], line 21-22).

(4)Regarding claim 4:

Komatsu et al. further disclose a color correction apparatus (see the Abstract, line 1-2), wherein said color gamut compressor (paragraph [0006], line 9-11) performs the color gamut compression on the color-corrected input image signal (paragraph [0006], line 14-18) based on data describing color reproduction characteristics of a color image display apparatus (see the Abstract, line 11-14, and paragraph [0006], line 21-23).

(5)Regarding claim 11:

Komatsu et al. further disclose a color correction apparatus (see the Abstract, line 1-2), wherein color corrector is provided with a chromaticity range converter that transforms a value axis indicating a color space (paragraph [0004], line 5-8), and said color gamut compressor acquires a convergence point on the value axis which is converted by said chromaticity range converter from both the color reproduction region defined by the chromaticity range indicating the color reproduction characteristics of the hue of the input image signal expressed in said color space and the color reproduction region defined by the value-converted chromaticity range (paragraph [0004], line 8-11), (the determining of the convergence point is read as the same concept as the matching).

(6)Regarding claim 12:

Komatsu et al. disclose a color correction apparatus (see the Abstract, line 1-2), comprising: a saturation conversion means for converting a saturation of an input image signal based on both color adjustment data describing both a hue to be saturation-converted and an amount of adjustment (paragraph [0006], line 16-20), and color reproduction characteristics data describing color reproduction characteristics of a color image display apparatus (paragraph [0006], line 25-27).

(7) Regarding claim 13:

A color correction (see the Abstract, line 1-2) method (paragraph [0007], line 18) comprising:

converting a hue indicated by image data using a hue converter (paragraph [0006], line 16-18, and paragraph [0011], line 18-21);

converting a value indicated by the image data acquired from said hue converter using a value converter (paragraph [0006], line 16-18, and paragraph [0011], line 18-21), (the converting of a value indicated by the image data is read as the same concept as the converting of hue indicated by image data);

converting a saturation indicated by the image data acquired from said value converter based on color reproduction characteristics data describing color reproduction characteristics of a color image display apparatus using a saturation converter (paragraph [0006], line 16-20); and

carrying out color gamut compression (see the Abstract, line 8-16, and paragraph [006], line 9-21) so that the image data acquired from said saturation converter has a chromaticity range which is contained in a color reproduction region (see the Abstract, line 16-19, and paragraph [0006], line 14-17) which is based on said color reproduction characteristics (see the Abstract, line 10-14) using a color gamut compressor (see the Abstract, line 8-16, and paragraph [006], line 9-21), wherein said color gamut compressor determines a hue of the image data converted by said color corrector (paragraph [0006], line 17-18), acquires both a chromaticity range indicating said color reproduction characteristics corresponding to a hue of the input image signal (paragraph [0006], line 17-23), and a chromaticity range indicating said color reproduction characteristics corresponding to the hue of the image data converted by said color corrector based on the data describing the color reproduction characteristics

(paragraph [0006], line 17-23). (The "acquiring of a chromaticity range indicating the color reproduction characteristics corresponding to the hue of the image data converted by the color corrector based on the data describing the color reproduction characteristics" is inherent, because the method of acquiring a chromaticity range indicating the color reproduction is the same, whether it is applied ones or twice, and whether it's applied to the same set of data or different set of data).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komatsu et al. (JP 2000-022978) in view of Lida (US-PGPUB 2003/0164968).

(1) Regarding claim 5:

Komatsu et al. disclose all the subject matter as described in claim 1 above.

Komatsu et el. do not explicitly mention the determining of a convergence point from both a color reproduction region defined by the chromaticity range indicating said color reproduction characteristics corresponding to the hue of said input image signal, and a color reproduction region defined by the chromaticity range indicating said color reproduction characteristics corresponding to the hue of the image data converted by said color correction means.

Lida, in analogous environment, teaches a color processing apparatus and method, where using an HVC color space (paragraph [0156], line 4-5), (the use of HVC color space permits to determine the convergence point from both color reproduction).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Lida, where using the HVC color space, in the system of Komatsu et el. In order to achieve a color conversion process, which reproduces colors so that color conversion results look the same, even when output gamuts have different shapes upon color conversion for converting an input color signal into an output color signal (paragraph [0032], line 3-7).

(2) Regarding claim 6:

Komatsu et al. disclose all the subject matter as described in claim 5 above.

Komatsu et al. do not explicitly mention that the color reproduction characteristics are expressed in a color space, and the determining of point of intersection where the color reproduction region for the hue of the input image signal and the color reproduction signal for the hue of the converted image data intersect in a plane showing value and saturation, and determining a convergence point having a value equal to that of the point of intersection and being on a value axis showing the color space.

Lida, in analogous environment, teaches a color processing apparatus and method, where determining the intersection coordinates (paragraph [0174], line 1-3), and using HVC space as for the hue mapping (step 1103) and HVC space as for the saturation level of mapping points (paragraph [0156], line 1-7, and paragraph [0157],

line 1-12), (the mapping points is read as the same concept as determining the convergence points).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Lida, where using the HVC color space, in the system of Komatsu et el. In order to achieve a color conversion process, which reproduces colors so that color conversion results look the same, even when output gamuts have different shapes upon color conversion for converting an input color signal into an output color signal (paragraph [0032], line 3-7).

(3)Regarding claim 7:

Komatsu et al. disclose all the subject matter as described in claim 5 above.

Komatsu et al. do not explicitly mention the color space, and the determining of point of intersection where the color reproduction region for the hue of the input image signal and the color reproduction signal for the hue of the converted image data intersect in a plane showing value and saturation, and defining an arbitrary point on a straight line connecting the point of intersection with the chromaticity range.

Lida, in analogous environment, teaches a color processing apparatus and method, where using a color space (paragraph [0156], line 4-5), (the use of HVC color space is read as the same as the color space), and using HVC space as for the hue mapping (step 1103) and HVC space as for the saturation level of mapping points (paragraph [0156], line 1-7, and paragraph [0157], line 1-12), (the mapping points is read as the same concept as determining the convergence points, and with the

mapping process it is possible to define an arbitrary point on a straight line connecting the point of intersection with the chromaticity range).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Lida, where using the HVC color space, in the system of Komatsu et el. In order to achieve a color conversion process, which reproduces colors so that color conversion results look the same, even when output gamuts have different shapes upon color conversion for converting an input color signal into an output color signal (paragraph [0032], line 3-7).

8. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Komatsu et al. (JP 2000-022978) in view of Lida (US-PGPUB 2003/0164968), Shimada (US-PGPUB 2002/0039106), and Schwartz et al. (US 5,999,703).

Komatsu et al. disclose all the subject matter as described in claim 1 above.

Komatsu et al. do not explicitly mention the following items:

1) the acquiring of chromaticity range indicating first color reproduction and the acquiring of the chromaticity range indicating the second color reproduction;

2) the describing of color tone of a visually-identified image; and

3) the acquiring of convergence point.

(a) Obviousness in view of Shimada

Shimada, in analogous environment, teaches an image processing apparatus and control method therefor, where acquiring the chromaticity range indicating first color reproduction and acquiring the chromaticity range indicating the second color reproduction (paragraph [0012], line 5-10).

It would have been obvious to one having ordinary skill in the art to use the system of Shimada, where acquiring the chromaticity range indicating first color reproduction and the chromaticity range indicating the second color reproduction, in the system of Komatsu et al. in order to perform stable color processing regardless of variations in color reproduction characteristic in an image input/output apparatus (paragraph [0011], line 2-6).

(b) Obviousness in view of Schwartz et al.

Schwartz et al., in analogous environment, teaches a computer program product for modifying the black channel of an output device profile without altering its colorimetric accuracy, where using the color tone of a visually identified image (column 6, line 58-63).

It would have been obvious to one having ordinary skill in the art to use the system of Schwartz et al., where using the color tone of a visually-identified image, in the system of Komatsu et al. in order to enable any person who owns an output profile for a four-color device to change the CGR level for that profile, without changing the colorimetry for that profile (column 3, line 15-17).

(c) Obviousness in view of Lida

Lida, in analogous environment, teaches a color processing apparatus and method, where using an HVC color space (paragraph [0156], line 4-5), (the use of HVC color space permits to determine the convergence point from both color reproduction).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Lida, where using the HVC color space, in the

system of Komatsu et el. In order to achieve a color conversion process, which reproduces colors so that color conversion results look the same, even when output gamuts have different shapes upon color conversion for converting an input color signal into an output color signal (paragraph [0032], line 3-7).

9. Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komatsu et al. (JP 2000-022978) in view of Ogatsu et al. (US-PGPUB 2002/0029715).

(1) Regarding claim 9:

Komatsu et al. disclose a correction apparatus (see the Abstract, line 1-2), wherein said color corrector acquires color adjustment data describing both a hue to be value-converted and an amount of adjustment for value (paragraph [0011], line 18-22), and has a value converter that converts a value indicated by the input image signal based on said color adjustment data (see the Abstract, line 6-8), and said color gamut compressor acquires a chromaticity range indicating color reproduction characteristics of a hue of the input image signal based on the data describing the color reproduction characteristics (paragraph [0006], line 14-18), acquires a convergence point from both a color reproduction region defined by the chromaticity range indicating the color reproduction characteristics of the hue of said input image signal and a color reproduction region defined by said value-converted chromaticity range (paragraph [0004], line 8-11), (the determining of the convergence point is read as the same concept as the matching), and compresses the color reproduction region defined by the

chromaticity range indicating the color reproduction characteristics of the hue of said input image signal toward the convergence point(paragraph [0006], line 14-18).

Komatsu et al. do not explicitly mention the acquiring of a value-converted chromaticity range with reference to a look-up table in which a hue value-converted by said value conversion means is described.

Ogatsu et al., in analogous environment, teaches a color conversion coefficient preparation apparatus, where acquiring a value-converted chromaticity range with reference to a look-up table in which a hue value-converted by said value converter is described (paragraph [0090], line 3-8).

It would have been obvious to one having ordinary skill in the art to use the system of Ogatsu et al., where using a lookup table, in the system of Komatsu et al. in order to provide a color conversion image processing capable of reproducing an image so as to calorimetrically match as whole (paragraph [0024], line 1-3).

(2) Regarding claim 10:

Komatsu et al. disclose all the subject matter as described in claim 9 above.

Komatsu et al. do not explicitly mention that user selects the hue value, and the use of the look-up table to select the value of hue.

Ogatsu et al., in analogous environment, teaches a color conversion coefficient preparation apparatus, where the user selects the hue (paragraph [0200], line 4-7), (the selecting of hue by the user is read as the same concept as the setting by the user of a plurality of data sets), and the use of the look-up table to select the value of hue (paragraph [0090], line 3-8).

It would have been obvious to one having ordinary skill in the art to use the system of Ogatsu et al., where the user select the plurality of data sets of device color data, in the system of Komatsu et al. in order to provide a color conversion image processing capable of reproducing an image so as to calorimetrically match as whole (paragraph [0024], line 1-3).

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amara Abdi whose telephone number is (571)270-1670. The examiner can normally be reached on Monday through Friday 8:00 Am to 4:00 PM E.T..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on (571) 272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Amara Abdi/
Examiner, Art Unit 2624
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